



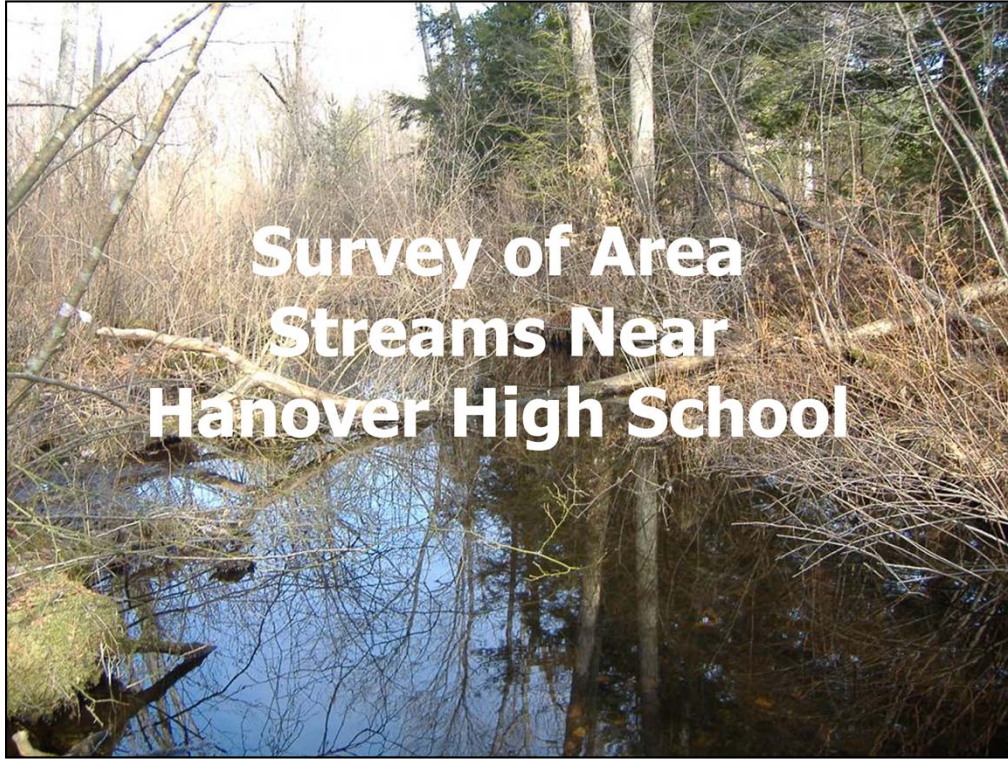
2006

Survey of Area Streams Near Hanover High School

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Testing Water Quality of Hanover Streams

- Purpose
- Procedure
- Watershed Testing Map
- Fecal Coliform tests
- Macroinvertebrates & Biotic Index
- Concentration of Phosphates & nitrates over 24 hrs
- Nitrate and phosphate loads
- Phosphate & nitrate concentrations - grab samples
- Temperature, pH and D.O. at site A over 24 hours
- Conclusion
- Acknowledgments





Purpose

The **purpose** of this experiment was to test the water quality of Hanover Streams.



Procedure

Indicators:

- pH level of the stream
- Nitrate & phosphate concentration of the stream
- Temperature of the stream
- Dissolved Oxygen
- Fecal coliform sample
- Macroinvertebrates

Sites A & B: 24 hour phosphate and nitrate samples, and nutrient load

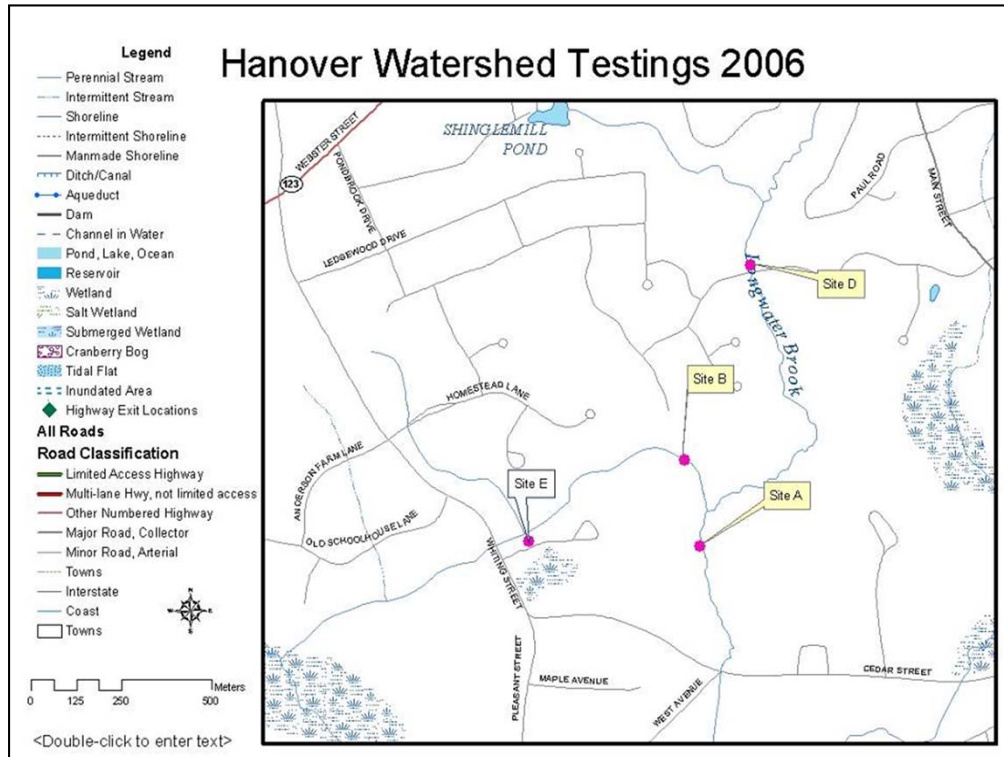
Site A only: dissolved oxygen, temperature, pH

A-C: fecal coliform, single time point analysis of pH, temperature, nitrates and phosphates



Watershed Map

- The sites on the maps are the four different locations of streams that we tested.
- The map indicates Site; A, B, D, & E
- The most common water sources are patches of wetlands, ponds, and the streams we researched.



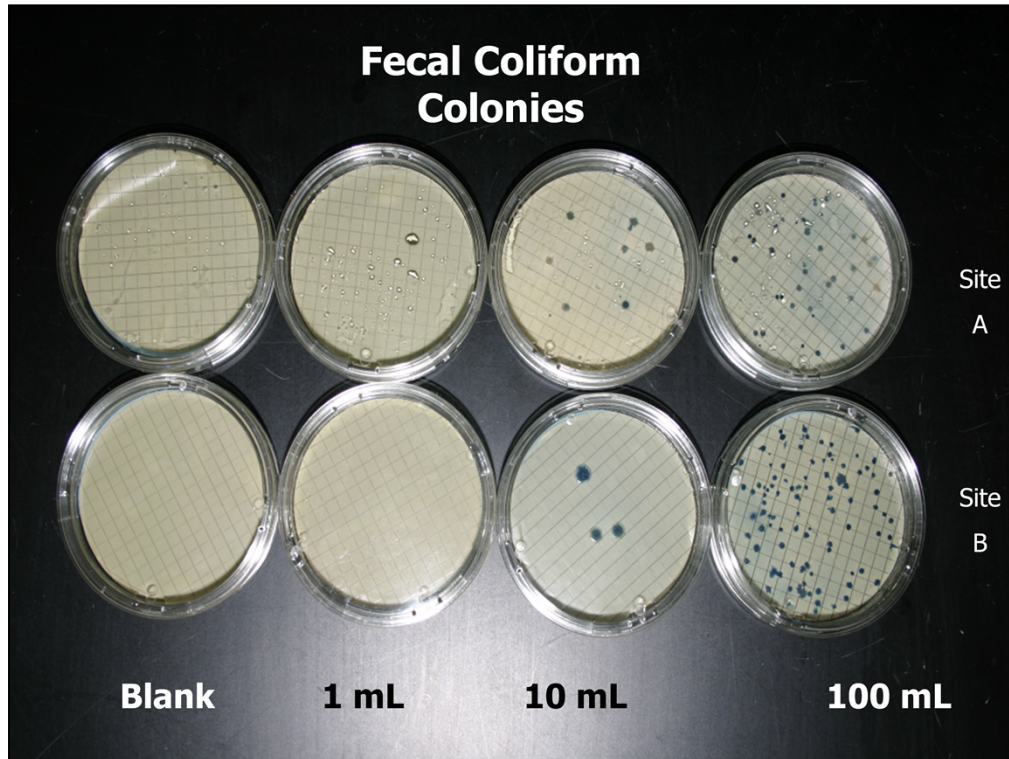
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The map indicated Site; A, B, D, & E

The most common water sources are patches of wetlands, ponds, and the streams we researched.

Filtering water
collected by the
Sigma
Site A

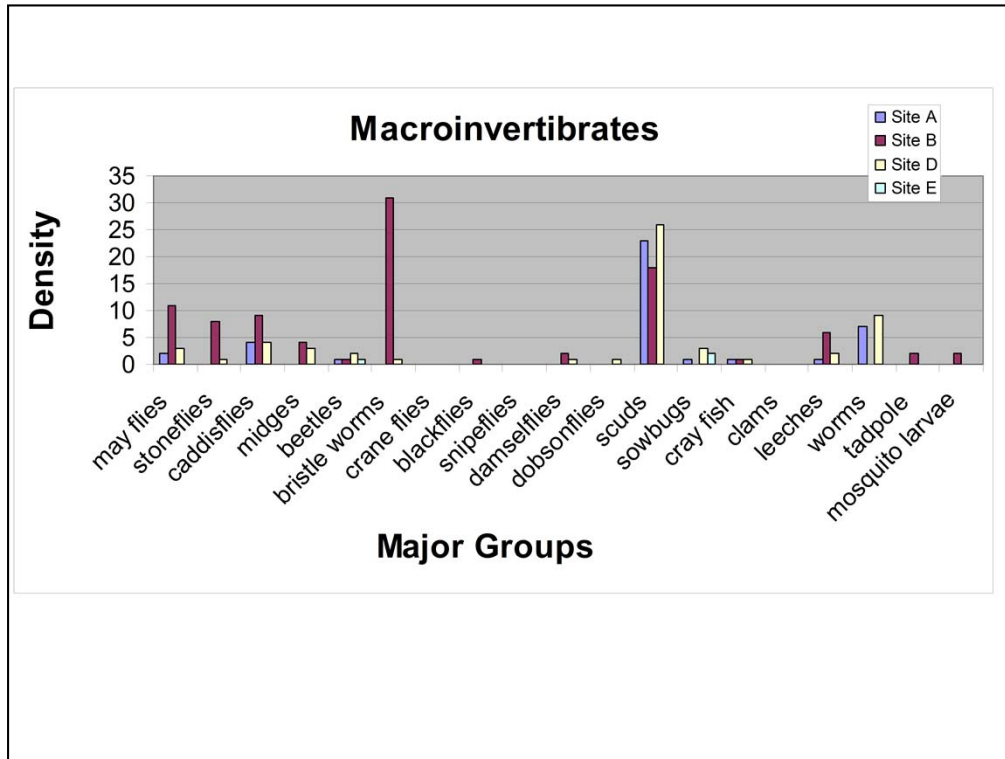




1, 10 and 100 ml samples were analyzed for Fecal coliform content at BSC
Each blue dot is the result of a Fecal coliform bacterium

Fecal coliform

Site	ml filtered	FC Filter Count	FC Colonies per 100ml
A1	100	28	28
A2	100	45	45
B	100	87	87
D1	100	43	43
E	100	29	29



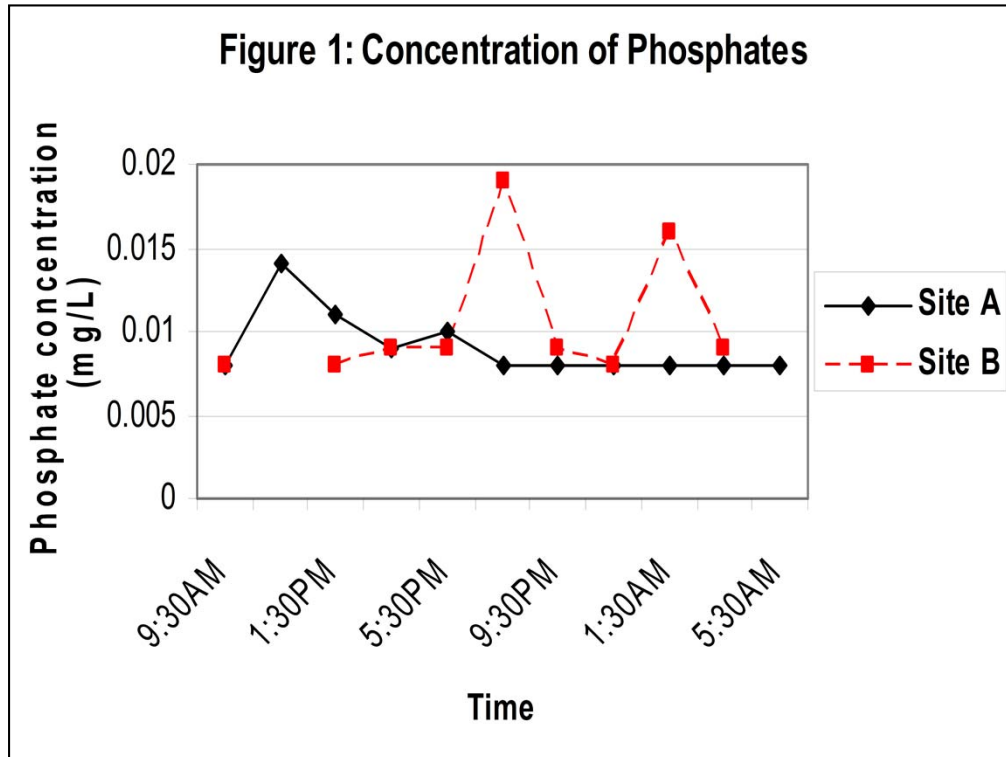
Site Biotic Indexes Based Upon Macroinvertebrates

Site A: 6.5

Site B: 5.8

Site D: 6.5

Site E: 6.7



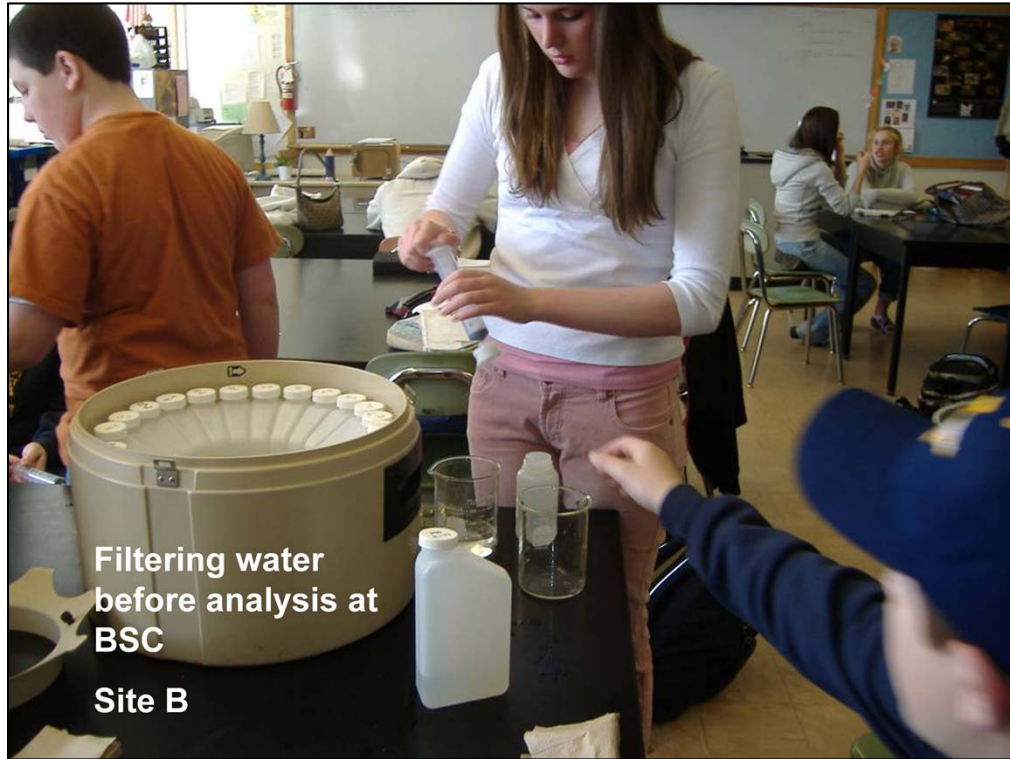
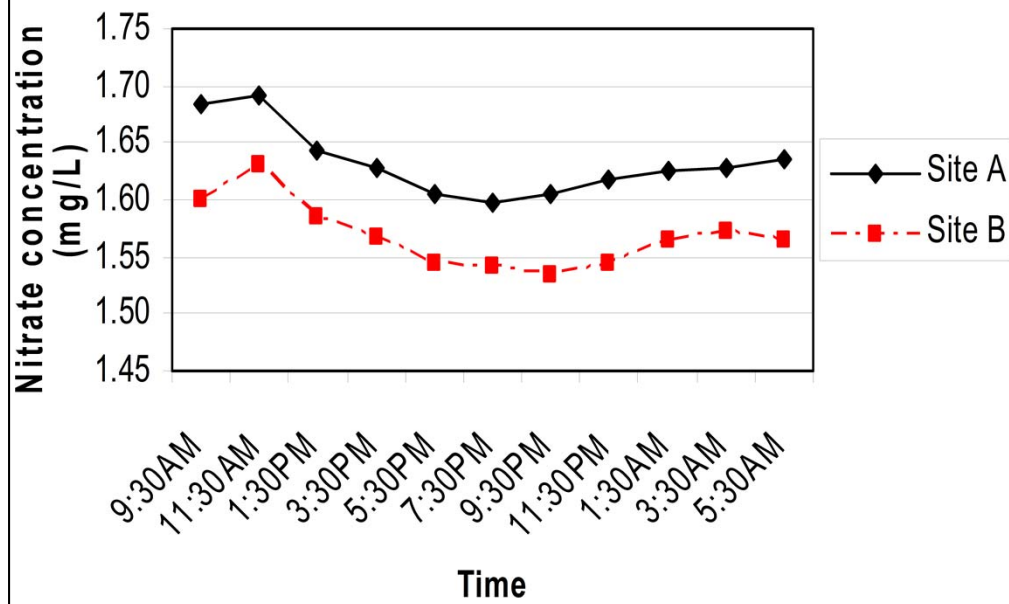


Figure 2: Concentration of Nitrates



Nitrate Load

The mass of nitrates passing through the stream in a 24 hour period

- Site A: 10.69 kg/day
- Site B: 17.7 kg/day

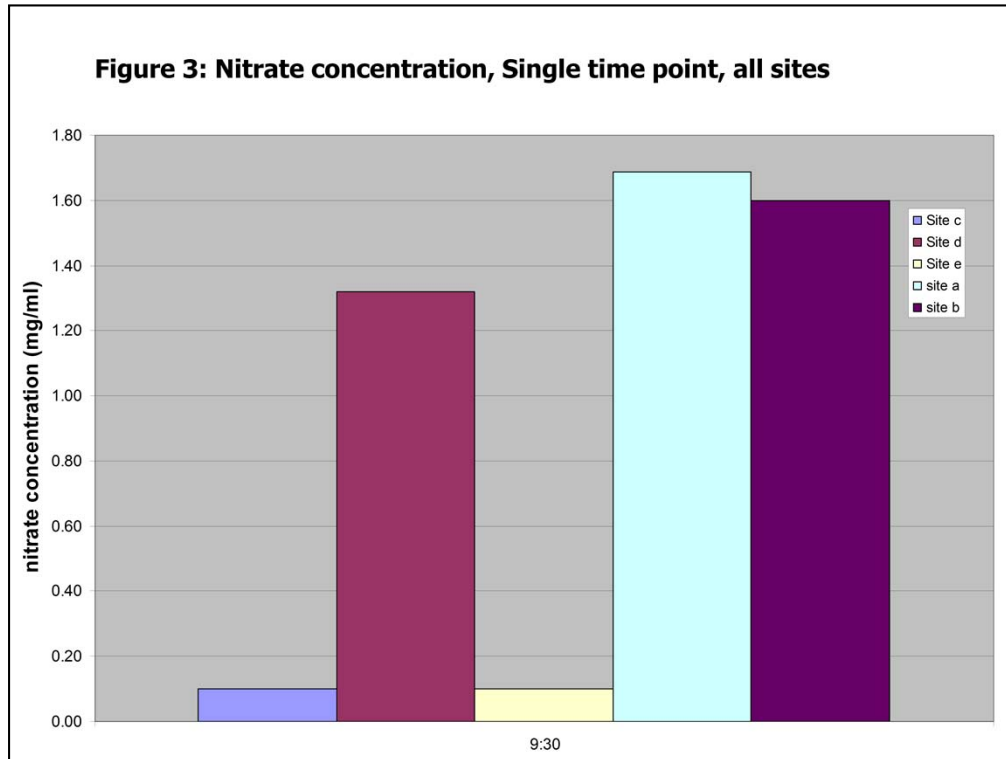
Phosphate Load

The mass of phosphates passing through the stream in a 24 hour period

- Site A: 0.059 kg/day
- Site B: 0.12 kg/day

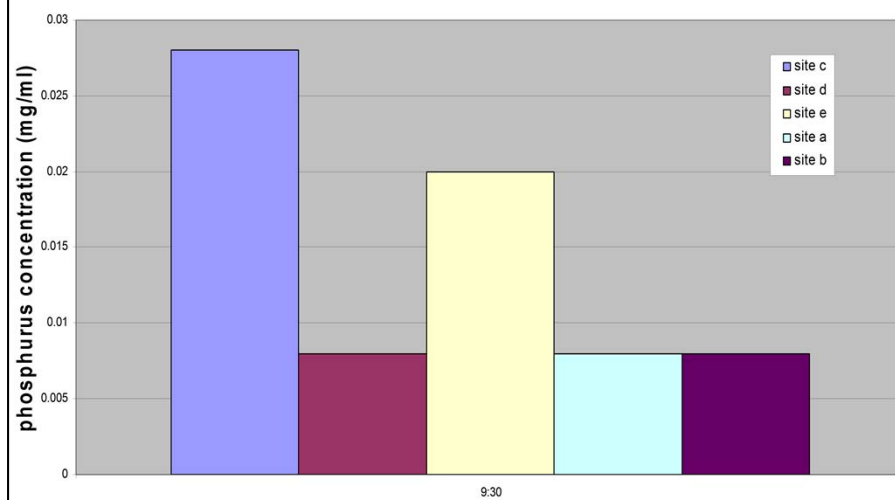






Bar graph phosphates

**Figure 4: Phosphate concentration,
single sample, all sites**



Bar graph nitrates





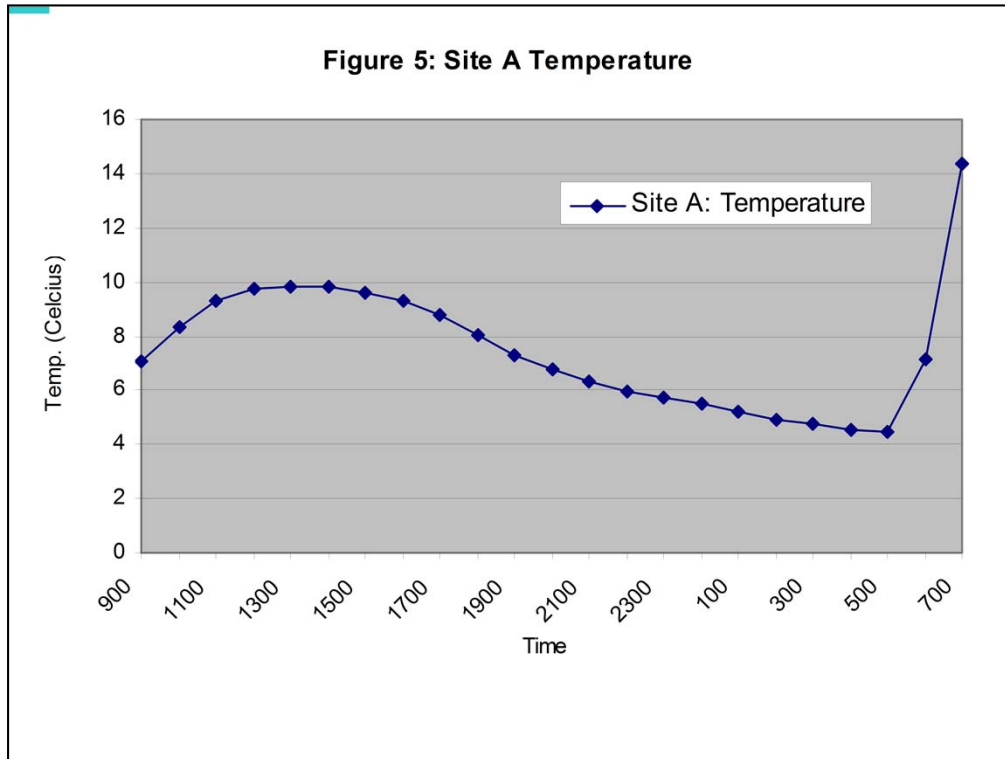


Figure 6: Site A pH

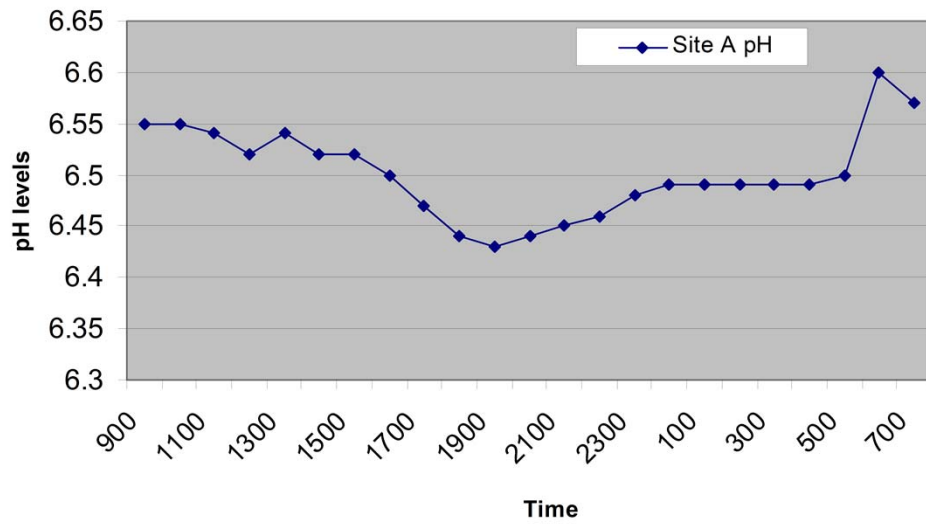
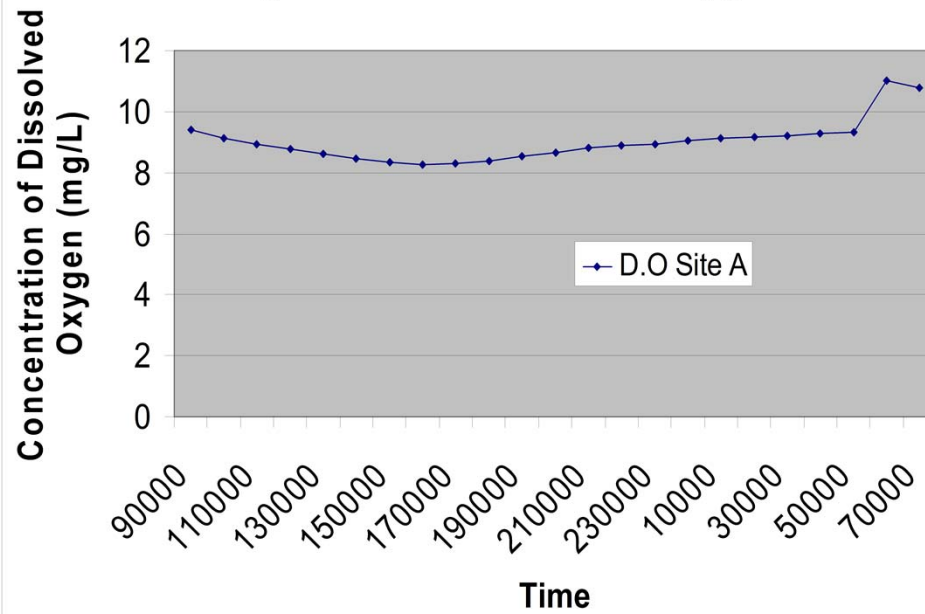


Figure 7: Site A Dissolved Oxygen



Conclusions:

- Despite appearance Site E tested normal.
- Nitrate and phosphate levels were acceptable.
- Fecal coliform counts were below state limits.
- Temperature, dissolved oxygen and pH were also within limits.

Further studies: Despite test results, Site E will go through further testing.

Acknowledgements:

Thank you to:

- Bridgewater State College
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- The Hanover Foundation